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THE MOTOR TRUCK AS AN AGENCY IN DIRECT MARKETING

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Introduction

The retention of the horse in the transportation of food products costs the American public upwards of a quarter of a billion dollars each year. That, in round numbers, is the annual saving that might reasonably be effected by the substitution of motor trucks for draft animals in primary agricultural haulage.

This thought does not necessarily imply the total or even partial elimination of the intermediaries, for it is recognized that the middleman often has an important and legitimate function as a distributor. Neither does it take into account the savings that would result where the power wagon is brought into active and successful competition with the railroads in so-called "long distance" hauling. On the contrary, it is based solely on the economic possibilities of the machine in primary agricultural trucking between the farms and the market or shipping point.

The cost of hauling crops from farms to shipping points is yearly growing greater. Only a short time ago the mean cost for 32 different products was 11 cents per 100 pounds; today it is near 15. Corn, for example, could be hauled in 1906 for \$1.78 a load; it now costs, on an average, all of \$2.

As a prime mover the horse has ceased to be a profitable investment. In the past ten years his price has nearly doubled. The cost of his feed has increased 163 per cent since 1908. The 750 cubic feet of barn he occupies at night is more valuable than ever before, while his hostler is paid \$60 a year more than in 1905.

The area given over to the production of his feed is more than equal to that of Illinois, Iowa, Ohio and Indiana combined. The 125,000,000 acres necessary for his annual sustenance are worth in excess of \$5,000,000,000 or more than a sixth of the total value of all farm lands in the United States.

On the usual assumption that one acre of land, scientifically farmed, will yield enough food for three persons, the horse-feed farms of this country would support 375,000,000 of people. The area devoted to the production of hay alone would sustain three times our entire urban population.

Such is the economic burden of horse haulage!

The Excessive Cost of Animal Transportation

An investigation conducted by the Department of Agriculture some years ago revealed the startling fact that the cost of hauling a \$465,000,000 wheat crop from farms to shipping points was \$34,000,000 or 7.3 per cent of its value. This conclusion was based on figures received from 2,800 county correspondents, showing that the average cost for the primary haulage of this crop was 9 cents per 100 pounds. The mean cost for beans, barley, flaxseed, hay, oats, rye and potatoes was about the same, while for apples, buckwheat, hops and rice the charge was from 2 to 3 cents higher. Vegetables and cottonseed cost 15 cents per hundredweight, and on cotton and all fruit other than apples the cost was 16 cents. The highest charge was on wool which averaged 44 cents. Generally speaking, the cost per hundredweight of any of the twenty-three different crops reported on increased with the length of haul, although there were, of course, exceptions due to variations in local conditions. Some products, such as cotton, with values relatively high per unit of weight, could be profitably transported over greater distances than other less valuable crops. Thus, in the case of corn, worth \$14.71 per ton, the cost was 7.5 cents per 100 pounds, or 10.2 per cent of the value. On cotton, which had an average value of \$220 per ton, the cost was 16 cents, only 1.4 per cent of the value.

Obviously, therefore, the length of haul, without regard to the nature of the crop transported, is of vital importance to the farmer, limited as he is by the restricted radius of action of draft animals. They confine his activity to those markets or shipping points within the circle which he can profitably serve, and limit him almost entirely to operations in the immediate vicinity. It is the high cost of primary haulage that deters him from entering more distant, and often more profitable, markets and causes him to entrust to others the marketing or subsequent distribution of his produce.

Where the Motor Truck Fits In

To the farmer, the most apparent source of economy resulting from the use of motor wagons lies in the increased radius of action possible with machine operation. It is this feature of the power-driven vehicle which broadens his sphere of activity and makes feasible a more direct and economical distribution between himself and the consumer. It is one of the most important arguments for the adoption of the motor truck as an agency in the direct marketing of food-stuffs.

It will be observed that the economic possibilities of the power wagon in that field are twofold. In the first place, the machine possesses a distinct advantage as a factor in the simplification of our present methods of food distribution. Many of the unduly aggressive intermediaries, whose excessive charges contribute so much to our high cost of living, can be eliminated by the adoption of the motor truck with its remarkable space-covering ability. Secondly, the increased speed, larger radius of action and greater carrying capacity so conspicuous in the power vehicle make possible a still further saving by a reduction in the cost of primary haulage. This dual usefulness of the motor wagon is destined to establish it as a permanent and potent factor in the disposition of farm produce.

I. SIMPLIFYING THE DISTRIBUTING SYSTEM

In considering the economic possibilities of the motor truck as an agency in direct marketing it will be interesting to observe the different results which are bound to follow the introduction of the machine in farm hauling. Three general effects will be at once apparent. The economic status of the producer will be greatly improved by better conditions surrounding the production and sale of farm produce, the burden on the consumer will be lightened to an appreciable extent by a simplification of our present distributing system, and the welfare of the nation as a whole will be materially increased.

The Improved Condition of the Farmer

Probably the most substantial, and certainly the most immediate, effect will be felt by the farmer himself. Wholly apart from the ability of the power wagon to reduce his ton-mile haulage costs, the

machine by reason of its great radius of action holds forth wonderful possibilities for widening his present sphere of profitable activity. It will enable him to enter entirely new fields, because the distance from market will no longer be the serious obstacle that it is today under horse methods. He will be able to carry his produce to the market in his own equipment whether the haul be 20, 50 or 100 miles, where he now transports it an average distance of less than 10 miles and leaves the remainder to the common carrier.

Being free from the physical limitations of draft animals, he will prefer hauling to the market although it may be 20 miles away while the local shipping point is but 5 miles distant. He will relish the opportunity to save the cost of the double handling inherent in present methods and at the same time reduce the losses usually experienced through shrinkage. The adoption of motor haulage would thus encourage among the producers a general desire to "market" rather than merely "ship" the products of the farm, and would result in an extensive elimination of the middleman.

Having enlarged his functions to include those of distributor as well as producer, the farmer will at once take advantage of his new position and begin to choose his market. This ability to select the most favorable field of operations, those which will net the biggest profits, will require a more thorough and intelligent study of the laws of supply and demand. He will learn to avoid the glutted market close at hand and to seek the more distant one with its better prices and greater opportunities that are denied his neighboring horse users. The increased speed possible with the motor wagon will enable him to reach the best market even before many of his horse-owning competitors whose hauls are shorter, and early enough for a careful search for the most liberal buyers.

He will then turn his attention to the intelligent selection of crops. Instead of limiting his efforts and, at the same time his profits, to the cultivation of only those products which can be marketed with the minimum risk of spoilage while in transit, as is the general rule under the horse régime, he will be governed by the demand. What is more, he can select his crops with greater regard to the nature of his soil, choosing those which will yield the maximum returns per acre. In that event, local demand will often be of only secondary importance in the sense that he may find a ready sale for his produce in the more distant markets if not in those near at hand. With me-

chanical haulage he will be no longer subject to local market conditions and the shifting demand of local buyers.

The farmer's interest in his new work as distributor will be further increased by the newly acquired ability to direct both ends of his business, production and distribution. The motor wagon with its advantage of greater speed will enable him to make in a given time much longer trips to market than he can at present with horse equipment as well as other trips which he would not now attempt. Similarly, it will effect a material reduction in the number of hours he allots each week to hauling, and will cause an attendant increase in the time he can devote to rest or more profitable labor.

This feature of machine operation will still further stimulate his desire for direct distribution by removing the dread of all-night drives to market. Where a 20-mile haul now takes from dusk to dawn, he will often be able to make a 50-mile round trip between supper and bedtime. Being certain of proper rest at night he will gladly go to market himself and give his personal attention to the sale of his produce rather than entrust it to an ignorant employee. Such a daily contact with the market and the numerous local buyers, a practice which is now met with only when the hauls are very short, is really necessary for an intelligent analysis of the fluctuations in public demand. And as his knowledge of selling and selling conditions increases, so will his desire for direct marketing with its greater financial gain.

In like manner, the resulting economy in labor will have a marked effect in intensifying his inclination for a more direct distribution of his produce. The drive to market with horse equipment diverts no small share of the farm hand's daily work capacity into wasteful and needless loss, and in addition contributes to a decided diminution in his efficiency as a working unit. With the introduction of motor haulage the time now spent in long tiring drives will be decreased to a surprising degree, and the man thus employed will be released for other and more productive effort. In effect this would amount to an increase in the work capacity of the producer's entire labor force, and in many cases it would bring about a very substantial reduction in his labor charge.

A saving in so important an item as the cost of labor must, of necessity, be accompanied by a lowering of the cost of production. This naturally gives the motorized farmer a distinct advantage over

the competing horse owner. He may choose to undersell his less progressive rival and retain his former percentage of profit, or he may prefer to sell at the same prices and pocket the difference. On the other hand, he may be content with his present margin of profit and willing to put what would otherwise be gain into the cost of a longer haul. The advantages to be obtained by this method—choice of market, choice of buyer, better prices and the other benefits previously enumerated—would, by widening the bounds of his selling sphere, often more than offset the profits waived. The attractions of this plan would be sufficient to insure an immediate tendency toward extensive elimination of the middleman and a resulting reduction in the expense of food distribution.

How the Consumer's Burden will be Lightened

It is quite generally conceded that the intricacies of our present food distributing system work a great hardship on the consumer, a burden that is extremely heavy and largely unnecessary. As a distributor the middleman, of course, has a well defined and legitimate function to perform, but many products are preyed upon by a long series of aggressive intermediaries who get most of the gain en route. The abuses practiced by a large number of our jobbers and commission merchants are peculiarly harassing to the producer, and contribute largely to the artificial method of pricing which is so closely related to the increasing cost of living.

The unnecessary inflation of values, from the price given the farmer to that paid by the consumer, frequently amounts to as much as 150 per cent of the producer's price. In Philadelphia the increase, according to the reports of a recent municipal investigation, ranges from 67 per cent in the case of high grade eggs to 266 per cent on live poultry.¹ The average increase on eight different products was more than 135 per cent. Similar conditions were found to exist in New York City when, in August, 1912, the New York State Food Investigating Commission inquired into markets, prices and the cost of foods. Of 60 products reported on, 14 showed an increase in price of more than 100 per cent between the wholesaler and the consumer. This increase included the profits of wholesaler and retailer and the

¹ See "A Study of Trolley Light Freight Service and Philadelphia Markets," by Clyde L. King, published by Department of Public Works, Philadelphia.

expense of transfer and house delivery. It developed that this added charge on all food products brought into New York City for consumption within the metropolitan district amounted in the aggregate to \$150,000,000 annually, the cost of transporting foodstuffs from the terminals to the consumers' kitchens.

The problem of transportation, from the time the farmer turns over his produce to the common carrier until it arrives at the terminal markets is a serious one and the charges are necessarily heavy. Such conditions must naturally exist in any large country, yet through the growth of a purely artificial system these carriage charges have become a prodigious element of cost. They have increased to an extent often absolutely unnecessary in the general economy of production and frequently represent little better than sheer loot by over-ambitious monopolies.

We are not here concerned with these larger matters, however, except in so far as they serve to indicate the hugeness of the burden borne by the consumer and to suggest feasible means for its reduction. They merit at least cursory mention in order to emphasize more forcibly the remedial possibilities of motor transportation with its resulting benefits to the consumer.

From a financial standpoint, and because of its direct effect on the cost of living, the most important result of the adoption of motor haulage as related to the consumer would be the reduction of retail prices made possible by a simplification of our distributing system. The power wagon's advantages of greater speed and greater radius of action, as has already been shown, would be potent factors in the tendency to eliminate the middleman by encouraging the farmer to market his produce as far as possible without the assistance of the customary intermediaries. The profits of the numerous middlemen could often be done away with entirely, while in many other cases the number of brokers could be so reduced that the percentage of the consumer's price received by them would be very much less than at present. One has but to refer to the reports on conditions in Philadelphia and New York City to realize the wonderful possibilities for savings in this direction.

Yet the elimination of the middleman's profit is not all. Foodstuffs, in their course between producer and consumer, pass through a number of hands, and when shipped by rail or water they are usually handled no less than ten times. At the farm the produce is loaded

on to the farmer's wagon and transported to the shipping point, where it is unloaded on to the station platform or dock. A second loading on to the cars or boat is then necessary and the actual shipment to market has only begun.

When shipment is made in less-than-carload lots from remote places the consignment is not always direct. That is to say, the produce may be transferred to other cars in which event two more handlings are necessary. Furthermore, it frequently happens that the shipment must be turned over to another railroad and the transfer may then involve still further handling caused by the cartage between depots. In either case, the produce is subsequently unloaded at the terminal only to be again loaded on to the wholesaler's wagon from which it is later removed on arrival at his warehouse. Two more handlings occur in loading the produce on to the retailer's wagon and in its removal at his store. The goods are again loaded in the retailer's wagon for house-to-house delivery and finally unloaded at the consumer's door.

Here we have a system involving ten handlings, six of which are often absolutely unnecessary with direct marketing, while two more can sometimes be saved where the retailer is eliminated. Each avoidable handling means a heavy and needless expense which must be covered by the price obtained from the consumer. By eliminating only half of the handlings inherent in our present system the motor wagon would oftentimes be able to effect a reduction of from 10 to 60 per cent in the consumer's price, the saving in any case being governed by the nature of the product and the expense of the prevailing handling methods.

Another important economy which would result from machine operation is the reduction in the losses due to shrinkage and deterioration. All perishable produce suffers from even the gentlest handling and its value is often utterly destroyed by the long series of abuses it receives on its journey from producer to consumer. Many foodstuffs deteriorate rapidly when exposed to the sun's rays on station platforms and they suffer from confinement in stuffy warehouses and freight depots. This is particularly true of fruits and vegetables which deteriorate very rapidly once decay has set in. The losses on these products from bruising and from fungous diseases quickened by frequent changes of temperature are extremely heavy.

Accordingly, it is only natural that the farmer should seek to

protect himself against these apparently unavoidable losses. His prices, therefore, must necessarily include a certain "margin of safety" to cover possible contingencies of this kind. The losses on one crop must be made up by higher prices on another.

Hence, it is but reasonable to assume that any means which will tend to minimize these losses must have a corresponding effect in lowering the prices paid by the consumer. Herein lies one of the most interesting features of motor haulage. By reducing the number of handlings now necessary, the attendant losses through deterioration and shrinkage must be proportionately decreased. And the wider the use of the power wagon in this field, the wider will be the effect on prices and the buying public.

Another advantage, though of lesser importance and for that reason more apt to be overlooked, is the improved condition of food-stuffs when forwarded direct from producer to consumer. Much of the fruit and vegetable products sold to the consumer under our present system is in an advanced stage of decay and must be discarded by him as unfit for human food. At certain seasons of the year, especially during the heat of summer when the delays on station platforms and confinement in improperly cooled cars and poorly ventilated warehouses cause such rapid deterioration, this percentage is often very large. At other times, when conditions are favorable and the handlings and opportunities for bruising are fewer, the percentage may run very low. Whatever the extent of the decay it places an unnecessary burden on the consumer by forcing him to purchase a greater quantity than would be required to yield a given amount of nutriment were the foodstuffs in good condition. It most certainly increases the ultimate cost of food by lowering the value received for each dollar invested.

A Greater National Welfare

Of no less importance, from the point of view of the economist, are the effects of motorized food haulage on the welfare of the country. There are in the United States today many millions of acres of unimproved lands which continue unproductive because of their remoteness from markets and shipping points. On much of this vast area the soil is peculiarly suited to the production of profitable crops, and a large percentage of the remainder could be made to yield handsome returns by the employment of scientific farming methods. And with all its latent possibilities such land can almost invariably be purchased

at prices from 10 to 90 per cent lower than land more favorably situated. Under present farming conditions involving the use of animal power in primary haulage the distance to market or shipping point is of vital importance. Accordingly, a haul of only 10 or 15 miles may isolate completely a district which otherwise possesses all the qualities for successful farming, simply because the cost of horse trucking beyond certain limits assumes such proportions that the small margin of profit ordinarily possible would be entirely consumed. Indeed, in some localities the margin of profit on certain crops is so small that many farmers dare not increase their hauls by as little as a mile or two. Many corn growers, for example, realize no more than 50 cents profit per acre on a yield of 30 bushels. To them, an increase of but 3 miles in the length of haul, at an average cost of 19 cents per ton-mile, would mean production at an actual loss.

The power wagon, by reason of its practically unrestricted radius of action, greater speed and superior ability for traveling over hard roads, holds forth attractive possibilities for the development of isolated farm lands. To districts without railroad facilities, and those whose very remoteness from local markets or shipping points precludes all chance for horse haulage at a profit, the motor truck offers the ultimate solution. By reducing the time and cost of primary food transportation, it removes the sole obstacle to the exploitation of our non-productive land which is otherwise suitable for agricultural purposes.

It is quite unnecessary to enter into a lengthy discussion of the results which would naturally follow the development of such lands. The excessive premiums now demanded for good lands on account of their proximity to markets and shipping points would no longer be justifiable and present farmland prices would undergo a substantial revision downward. This, in turn, would lower the cost of production and effect a material reduction in the prices to the consumer. Accompanying the extensive introduction of motor trucks in farm haulage would come a marked decrease in the demand for draft animals. Although it is impossible to say how many horses or mules each power wagon would replace, it is certainly very obvious that a widespread application of the motor idea would mean the displacement of hundreds of thousands of draft animals. Every draft animal we use requires \$200 worth of soil for his sustenance. The elimination of a single horse means the recovery of land capable of sustaining 15 persons!

II. REDUCING THE COST OF AGRICULTURAL HAULAGE

In concluding this short recital of the most important possibilities of the motor truck as a factor in the direct distribution of food products it will be interesting to inquire briefly into the merits of the machine as a cheaper medium of transportation. The power wagon is capable of effecting such remarkable savings in ordinary agricultural trucking alone, entirely apart from those economies due to direct marketing, that a few observations on this feature of machine operation will not be ill-timed.

At the outset it must be apparent that any definite statements as to the precise economies that can be effected by the use of motors, even under stated conditions of service, are quite impossible. So much depends on local conditions governing the price of feed, value of stable land, cost of labor, nature of the roads, the grades, the kind of load carried, etc., that estimates are of little value. The same is true of motor equipment. In any case, whatever statement of cost is submitted must be accepted merely as a typical example of results obtained in a given locality, and it should be taken only as an indication of the possibility for like economies under similar conditions.

The Measure of Saving

The most conspicuous item of saving in the operation of motor trucks is in the cost of labor. The machine's greater carrying capacity enables it to haul much more at a load than the average horse-drawn vehicle which usually requires, in farm work at least, an equal outlay for driver's wages. Where several teams are employed and the power wagon is of a size sufficient to care for the work done by two or more of them in a given period the number of horse drivers eliminated will naturally be the measure of economy in labor cost. This saving is often further increased by the use of trailers attached to the truck. These add greatly to the machine's carrying capacity without increasing the cost of operation in the same proportion.

Some charges, such as shoeing, veterinary and the like, are not encountered in an analysis of motor costs, yet the latter involve new items—license fees, tire repairs and renewals, mechanical replacements, etc. Depreciation, interest on the investment, insurance, taxes and housing are items of fixed expense which must be considered in either case. The first four will frequently be larger for the machine

owing to the greater investment usually involved. The cost of housing or storing on the other hand will always be less than for the horse equipment replaced, even when the change to motors has made no reduction in the number of vehicles employed.

Although operating costs cease when the truck stops working—the fixed items of expense being the only ones chargeable against it during unproductive moments—the maximum economy is possible only when the number of idle hours is reduced to the minimum. Inasmuch as the opportunities for saving by the use of motor wagons lie principally in the machine's ability to carry larger loads over greater distances and at an increased rate of speed, the best records are obtained when these features are developed to the utmost. Some really astonishing results are obtained, however, and especially in the service here considered, when surrounding conditions are most unfavorable to a realization of anything like the ideally efficient performance referred to.

In agricultural haulage savings of from 25 to 60 per cent over horse costs are by no means phenomenal. It frequently happens that on the simplest kind of trucking—straight haulage work between farm and shipping point—a single power wagon will replace six to eight horses, and numerous cases have been recorded in farm practice where a machine with one operator has done work equivalent to that performed by 16 horses and 8 drivers. In such instances the saving in labor alone is quite startling to the uninitiated.

The Reduction of Wastes in Marketing

The motor truck is often brought into direct competition with railroads, and on many occasions it has established surprising economies in straight long distance hauling. Although it is obviously impossible to show an economy in favor of the power wagon in all cases of such competitive hauling, the widely different conditions of service involved in the many examples spoken of justify the belief that the machine is destined to have an extensive development in that direction. Whenever a farmer can haul his produce more cheaply by motor than by rail he will certainly be only too glad to do so, and the benefits of the more direct distribution will be felt by the consumer as well. The savings due to the mere elimination of the needless handlings will often be in themselves sufficient to establish the econ-

omy of the machine, even where the ton-mile cost of the latter, calculated on a straight haul between shipping point and terminal, exceeds that of the railroad.

There are other economies, indirect savings not observable on a bare comparison of horse and motor costs, which will mean much to both producer and consumer. With a lower ton-mile cost as a basis for his operations, the motorized farmer will market his produce more frequently and thus realize larger profits from the resulting reduction in the losses due to deterioration and "loss-off" selling. Such an improvement in marketing conditions will, as already observed, react on his cost of production and in turn cause a lowering of the consumer's price.

Better Food and Lower Prices

The increased speed of the motor truck will make it possible for him to take advantage of the better prices offered to the earliest arrivals at market, and by shortening the time required for the trip will reduce his losses through shrinkage in transit. This is particularly true of fruit, which suffers most during the time between picking and precooling for shipment. No amount of subsequent refrigeration can repair or even arrest the deterioration which begins during that period.

The quicker trip to market by means of the motor truck results in an improved condition of the produce due to the more rapid circulation of air around it en route and in a minimization of exposure to the sun's heat. In hauling to market under present methods food products are invariably exposed for hours to the heat of the sun, the temperature being in many instances sufficient to cause fatal overripeness and even incubation in the case of eggs.

Similar improvements in the condition of foodstuffs will also follow the elimination of rail shipping wherever possible. Many products are permanently injured, to the loss of producer and consumer alike, by rough handling, exposure to the elements on shipping platforms and by contamination from foul odors in dirty stations and warehouses. Poultry, for example, suffers heavily from injuries caused by careless handling and from loss of weight and deaths due to confinement. Eggs, a particularly delicate product, absorb moisture readily and their quality is easily impaired by contact with impure air.

The elimination of these and kindred losses is of great importance to the producer in the reduction of his haulage expense, for they now constitute a very large factor in the determination of his profits. Likewise they contribute materially to the high standard of prices at present paid by the consumer.

Competing with the Railroads

The precise extent to which these wastes can be avoided or, in other words, the extent to which the power wagon can displace the railroad by direct marketing, depends on a variety of conditions. The length of haul and the size of the shipment are the most important factors. Obviously, the opportunities for the motor truck to compete successfully with the railroad will be greatest where the loads carried are not sufficient to make up carload lots, for on small consignments the freight rates are invariably higher. Short hauls, too, are apt to be more favorable to machine operation than those where the "through freight" has the right of way over long distances. Yet, there have been many cases where motor wagons have outclassed the railroad in points of speed and ton-mile cost when surrounding conditions, judged from what has just been said, would seem to be most unfavorable. Large shipments comprising several carloads have been made over distances in excess of 200 miles more cheaply by motor than by rail. However, such cases are not the rule. They simply demonstrate the remarkable ability of the power wagon as a cheap haulage medium.

The Problem of Investment

A question merely incidental to the adoption of motor wagons for direct food distribution, but one that is often offered as an argument against machine operation, is the increased investment required and the inability of the average farmer to carry it. This apparently sound objection may be completely answered in three different ways: (1) by sales made on the deferred payment plan; (2) coöperative purchases by groups of farmers; and (3) hauling by professionals.

Where the farmer buys his equipment on a time basis he may often hasten the completion of his purchase contract by hauling for others at an attractive profit. In some recorded instances of this kind the net profit realized each week has been more than \$75, an income derived from work done by the machine when it was not en-

gaged on the operator's own hauling. The profit from such an arrangement would be alone sufficient to pay for the average machine in less than a year, the farmer's own hauling meanwhile being done at no cost whatever.

In coöperative purchase by groups of neighboring farmers the burden placed on each becomes almost inconsiderable, a matter of but a few hundred dollars when half a dozen or more are concerned. Coöperative associations, already in existence among producers everywhere, can effect the necessary purchases selling the service to members at a price which need not exceed the actual cost of operation—fixed, running, maintenance and overhead charges. Experience has demonstrated that under such conditions the economy is usually much greater than in the case of individual ownership, for the equipment is apt to be operated at higher efficiency.

The third plan, under which professional carriers own and operate the equipment and sell the service to the farmers at a fair profit, has already been favorably received and successfully tried. Mass application of machines makes possible a very low operating expense, so low in fact that the cost to the farmer may often be no more than where a coöperative, "not-for-profit" association with less equipment undertakes to supply the service at actual cost. The service may be sold to the farmer on a time basis at a fixed rate per hour, day, week, month or year, on a mileage basis, or the carrier may agree to haul all merchandise at a certain price per mile or ton-mile. Each method has been successfully worked out in practice.

CONCLUSION

As a means for simplifying our present complex distributing system the motor truck holds forth greater possibilities than any other single medium we have. It offers the farmer a wider sphere of activity, choice of crops, market and buyer, a lower haulage cost and a reduction of his present losses. For the consumer it insures better food and lower prices. To the nation at large it promises the development of remote and unproductive lands, more farmers and a greater volume of foodstuffs. In view of the facts, the retention of the horse in agricultural hauling is nothing short of sheer waste.